236775 DISPLAY?
164719 SCREEN#

L6 95 (DISPLAY? OR SCREEN#) AND L5
=> s (handwrit? or script#### or hand) and l6
2202 HANDWRIT?
2361 SCRIPT####
677781 HAND

L7 79 (HANDWRIT? OR SCRIPT#### OR HAND) AND L6
=> d l7 1-79

1. 5,583,795, Dec. 10, 1996, Apparatus for measuring eye gaze and fixation duration, and method therefor; Christopher C. Smyth, 364/516, 559, 571.01 [IMAGE AVAILABLE]

2. 5,579,071, Nov. 26, 1996, Camera stabilizing support; Donald E. Wetzel, et al., 396/428; 352/243 [IMAGE AVAILABLE]

3. 5,574,843, Nov. 12, 1996, Methods and apparatus providing for a presentation system for multimedia applications; John D. Gerlach, Jr., 395/118, 348, 521 [IMAGE AVAILABLE]

4. 5,572,999, Nov. 12, 1996, Robotic system for positioning a surgical instrument relative to a patient's body; Janez Funda, et al., 128/653.1, 662.03, 662.06; 600/118 [IMAGE AVAILABLE]

5. 5,571,698, Nov. 5, 1996, Directed evolution of novel binding proteins; Robert C. Ladner, et al., 435/69.7, 6, 69.1, 172.3, 252.3, 320.1 [IMAGE AVAILABLE]

6. 5,555,363, Sep. 10, 1996, Resetting the case of text on a computer **display**; Frederich N. Tou, et al., 395/146 [IMAGE AVAILABLE]

7. 5,552,994, Sep. 3, 1996, System for printing social expression cards in response to electronically transmitted orders; Thomas G. Cannon, et al., 364/468.01, 479.03 [IMAGE AVAILABLE]

8. 5,550,641, Aug. 27, 1996, System and method for rendering images; Amnon Shashua, et al., 386/128; 348/370, 371; 358/906 [IMAGE AVAILABLE]

9. 5,512,920, Apr. 30, 1996, Locator device for control of graphical objects; Sarah F. F. Gibson, 345/163, 167 [IMAGE AVAILABLE]

10. 5,504,822, Apr. 2, 1996, Character recognition system; Arthur W. Holt, 382/218, 135, 159, 178 [IMAGE AVAILABLE]

11. 5,471,564, Nov. 28, 1995, System and method for dynamic printer timeout; Stephen V. Dennis, et al., 395/114, 110, 650 [IMAGE AVAILABLE]

12. 5,471,563, Nov. 28, 1995, System and method for automatic resolution reduction; Stephen V. Dennis, et al., 395/114, 109, 110, 128 [IMAGE AVAILABLE]

13. 5,454,717, Oct. 3, 1995, Custom orthodontic brackets and bracket forming method and apparatus; Craig A. Andreiko, et al., 433/24 [IMAGE AVAILABLE]

14. 5,450,205, Sep. 12, 1995, Apparatus and method for real-time measurement of thin film layer thickness and changes thereof; Herbert H. Sawin, et al., 356/382; 156/626.1; 356/357 [IMAGE AVAILABLE]

15. 5,448,053, Sep. 5, 1995, Method and apparatus for wide field distortion-compensated imaging; Geoffrey B. Rhoads, 250/201.9; 356/121 [IMAGE AVAILABLE]

16. 5,447,432, Sep. 5, 1995, Custom orthodontic archwire forming method and apparatus; Craig A. Andreiko, et al., 433/24 [IMAGE AVAILABLE]

17. 5,446,465, Aug. 29, 1995, Satellite location and pointing system for use with global positioning system; Debra L. Diefes, et al., 342/357, 352 [IMAGE AVAILABLE]

18. 5,434,928, Jul. 18, 1995, Method for verifying a **handwritten** signature entered into a digitizer; Samuel J. Wagner, et al., 382/187, 119 [IMAGE AVAILABLE]

19. 5,431,562, Jul. 11, 1995, Method and apparatus for designing and forming a custom orthodontic appliance and for the straightening of teeth therewith; Craig A. Andreiko, et al., 433/24 [IMAGE AVAILABLE]

20. 5,428,805, Jun. 27, 1995, Method and apparatus for recognizing and performing **handwritten** calculations; Michael W. Morgan, 395/800; 345/173, 179; 364/231.2, 231.3, 231.31, 237.2, 237.5, 286.1, 286.3, 709.11, DIG.1 [IMAGE AVAILABLE]

21. 5,424,756, Jun. 13, 1995, Track pad cursor positioning device and method; Yung-Lung Ho, et al., 345/158, 175 [IMAGE AVAILABLE]

22. 5,417,210, May 23, 1995, System and method for augmentation of endoscopic surgery; Janez Funda, et al., 128/653.1; 348/65; 364/413.13; 600/109 [IMAGE AVAILABLE]

23. 5,412,200, May 2, 1995, Wide field distortion-compensating imaging

system and methods; Geoffrey B. Rhoads, 250/201.9; 356/121 [IMAGE AVAILABLE]

24. 5,403,484, Apr. 4, 1995, Viruses expressing chimeric binding proteins; Robert C. Ladner, et al., 435/235.1, 69.7, 172.3, 252.3, 320.1; 530/350; 536/23.4 [IMAGE AVAILABLE]

25. 5,396,023, Mar. 7, 1995, Wholetone musical selection device; T. Wilfred Pye, 84/433, 704 [IMAGE AVAILABLE]

26. 5,368,478, Nov. 29, 1994, Method for forming jigs for custom placement of orthodontic appliances on teeth; Craig A. Andreiko, et al., 433/24; 364/413.28; 433/3 [IMAGE AVAILABLE]

27. 5,365,598, Nov. 15, 1994, **Handwritten** keyboardless entry computer system; Ralph Sklarew, 382/189; 178/18; 382/315 [IMAGE AVAILABLE]

28. 5,363,475, Nov. 8, 1994, Image generator for generating perspective views from data defining a model having opaque and translucent features; Stephen J. Baker, et al., 395/122, 131, 164 [IMAGE AVAILABLE]

29. 5,345,391, Sep. 6, 1994, Method and apparatus for production of high resolution three-dimensional objects by stereolithography; Charles W. Hull, et al., 364/474.24; 156/273.3, 379.6; 264/308, 401; 364/468.27; 395/119; 425/174.4 [IMAGE AVAILABLE]

30. 5,337,258, Aug. 9, 1994, Cost metrics; Stephen V. Dennis, 364/551.01 [IMAGE AVAILABLE]

31. 5,317,732, May 31, 1994, System for relocating a multimedia presentation on a different platform by extracting a resource map in order to remap and relocate resources; John D. Gerlach, Jr., et al., 395/600; 364/222.81, 226.6, 260.4, 281.1, 282.1, DIG.1; 395/154, 159, 650 [IMAGE AVAILABLE]

32. 5,299,133, Mar. 29, 1994, Method for determining and controlling fiber luster properties; Henry Kobsa, et al., 364/468.01, 470.15, 578 [IMAGE AVAILABLE]

33. 5,297,216, Mar. 22, 1994, **Handwritten** keyboardless entry computer system; Ralph Sklarew, 382/189, 314 [IMAGE AVAILABLE]

34. 5,285,506, Feb. 8, 1994, Method of recording a **handwritten** message; John F. Crooks, et al., 382/189; 228/119; 345/174; 382/201, 315 [IMAGE AVAILABLE]

35. 5,263,488, Nov. 23, 1993, Method and apparatus for localization of intracerebral sources of electrical activity; Barry D. Van Veen, et al., 128/731 [IMAGE AVAILABLE]

36. 5,261,041, Nov. 9, 1993, Computer controlled animation system based on definitional animated objects and methods of manipulating same; Galyn Susman, 395/152, 119, 122, 130, 135 [IMAGE AVAILABLE]

37. 5,227,874, Jul. 13, 1993, Method for measuring the effectiveness of stimuli on decisions of shoppers; Henry Von Kohorn, 348/2, 13; 364/402; 379/90, 201; 455/2, 4.2 [IMAGE AVAILABLE]

38. 5,223,409, Jun. 29, 1993, Directed evolution of novel binding proteins; Robert C. Ladner, et al., 435/69.7, 5, 69.1, 172.3, 252.3, 320.1; 530/387.3, 387.5 [IMAGE AVAILABLE]

39. 5,208,869, May 4, 1993, Character and pattern recognition machine and method; Arthur W. Holt, 382/138, 159, 178 [IMAGE AVAILABLE]

40. 5,198,346, Mar. 30, 1993, Generation and selection of novel DNA-binding proteins and polypeptides; Robert C. Ladner, et al., 435/69.1, 172.3, 252.3, 320.1 [IMAGE AVAILABLE]

41. 5,189,633, Feb. 23, 1993, Apparatus and method for interactively manipulating mathematical equations; Allan R. Bonadio, 364/709.12, 735; 395/146, 161 [IMAGE AVAILABLE]

42. 5,184,307, Feb. 2, 1993, Method and apparatus for production of high resolution three-dimensional objects by stereolithography; Charles W. Hull, et al., 364/474.24; 156/273.3, 379.6; 264/308, 401, 482; 364/468.27; 395/118, 161; 425/174.4 [IMAGE AVAILABLE]

43. 5,175,503, Dec. 29, 1992, Ascertaining imaging cycle life of a photoreceptor; Satchidanand Mishra, et al., 324/452, 457 [IMAGE AVAILABLE]

44. 5,157,737, Oct. 20, 1992, **Handwritten** keyboardless entry computer system; Ralph Sklarew, 382/315; 345/173 [IMAGE AVAILABLE]

45. 5,137,662, Aug. 11, 1992, Method and apparatus for production of three-dimensional objects by stereolithography; Charles W. Hull, et al., 264/401; 118/620, 712; 156/64, 272.8, 273.3, 378, 379.6; 250/492.1; 264/40.1, 308, 406; 364/468.27; 365/107; 425/135, 174.4; 427/8, 512, 581, 582 [IMAGE AVAILABLE]

46. 5,097,517, Mar. 17, 1992, Method and apparatus for processing bank checks, drafts and like financial documents; Arthur W. Holt, 382/137, 177

[IMAGE AVAILABLE]

47. 5,096,815, Mar. 17, 1992, Generation and selection of novel DNA-binding proteins and polypeptides; Robert C. Ladner, et al., 435/69.1, 172.3, 252.3, 320.1 [IMAGE AVAILABLE]

48. 5,062,586, Nov. 5, 1991, Missile tracking, guidance and control apparatus; Gregory L. Hobson, et al., 244/3.12, 3.16 [IMAGE AVAILABLE]

49. 5,061,841, Oct. 29, 1991, Apparatus and methods for controlling a welding process; Richard W. Richardson, 219/130.01 [IMAGE AVAILABLE]

50. 5,059,359, Oct. 22, 1991, Methods and apparatus for production of three-dimensional objects by stereolithography; Charles W. Hull, et al., 264/401; 118/620; 156/272.8, 273.3, 379.6; 250/492.1; 264/308; 364/468.27; 365/107; 425/174.4; 427/510 [IMAGE AVAILABLE]

51. 5,053,757, Oct. 1, 1991, **Touch** panel with adaptive noise reduction; Robert D. Meadows, 345/173; 341/22 [IMAGE AVAILABLE]

52. 4,985,634, Jan. 15, 1991, Ion beam lithography; Gerhard Stengl, et al., 250/492.2, 281, 298, 398, 491.1; 430/30 [IMAGE AVAILABLE]

53. 4,977,529, Dec. 11, 1990, Training simulator for a nuclear power plant; Gerald L. Gregg, et al., 364/578, 492; 376/245, 463 [IMAGE AVAILABLE]

54. 4,972,496, Nov. 20, 1990, **Handwritten** keyboardless entry computer system; Ralph Sklarew, 382/187; 345/178, 901; 382/202; D14/100 [IMAGE AVAILABLE]

55. 4,972,347, Nov. 20, 1990, Method and apparatus for determining the correct tool dimensions for a three dimensional tool mounted on a manipulator; Ronald L. Tarvin, et al., 364/474.28; 318/568.13; 364/474.34; 395/89, 98; 901/3 [IMAGE AVAILABLE]

56. 4,943,702, Jul. 24, 1990, Apparatus and methods for controlling a welding process; Richard W. Richardson, 219/124.34, 130.01 [IMAGE AVAILABLE]

57. 4,890,241, Dec. 26, 1989, Robotic system; Brian D. Hoffman, et al., 395/90, 83, 84; 901/8 [IMAGE AVAILABLE]

58. 4,873,651, Oct. 10, 1989, Method and apparatus for reconstructing three-dimensional surfaces from two-dimensional images; Daniel Raviv, 395/94; 250/224; 356/375; 364/559 [IMAGE AVAILABLE]

59. 4,837,842, Jun. 6, 1989, Character and pattern recognition machine and method; Arthur W. Holt, 382/204; 235/379; 382/218 [IMAGE AVAILABLE]

60. 4,817,034, Mar. 28, 1989, Computerized **handwriting** duplication system; William F. Hardin, Sr., et al., 380/2; 178/18; 345/173; 364/918.7, 919, 919.1, 920.7, 927.1, 927.2, 927.6, 927.61, 929.3, 940.81, 943, 943.5, 951.1, 951.3, 974, DIG.2; 380/13; 382/315 [IMAGE AVAILABLE]

61. 4,766,704, Aug. 30, 1988, Method and apparatus for the custom shaping of dental inlays, onlays, crowns, bridges and parts thereof; Marco Brandestini, et al., 451/58, 72; D34/21 [IMAGE AVAILABLE]

62. 4,739,404, Apr. 19, 1988, Apparatus and methods for controlling a welding process; Richard W. Richardson, 348/719, 90 [IMAGE AVAILABLE]

63. 4,707,845, Nov. 17, 1987, **Touch** panel with automatic nulling; Philip T. Krein, et al., 178/19; 345/173, 174 [IMAGE AVAILABLE]

64. 4,698,461, Oct. 6, 1987, **Touch** panel with automatic frequency control; Robert D. Meadows, et al., 345/174 [IMAGE AVAILABLE]

65. 4,698,460, Oct. 6, 1987, **Touch** panel system; Philip T. Krein, et al., 345/173 [IMAGE AVAILABLE]

66. 4,595,820, Jun. 17, 1986, Apparatus and methods for controlling a welding process; Richard W. Richardson, 219/137PS, 130.01, 130.21, 130.51 [IMAGE AVAILABLE]

67. 4,555,873, Dec. 3, 1985, Method and apparatus for wheel conditioning in a grinding machine; Roderick L. Smith, 451/21, 56, 72 [IMAGE AVAILABLE]

68. 4,550,532, Nov. 5, 1985, Automated machining method; George R. Fletcher, Jr., et al., 451/5; 364/474.06, 474.24, 474.27; 451/6, 48, 140, 141 [IMAGE AVAILABLE]

69. 4,530,061, Jul. 16, 1985, Method of producing stencils; Janet M. Henderson, et al., 364/474.25; 219/121.67, 121.72; 364/191, 474.08, 474.29 [IMAGE AVAILABLE]

70. 4,468,694, Aug. 28, 1984, Apparatus and method for remote **displaying** and sensing of information using shadow parallax; Albert D. Edgar, 348/135, 744; 353/28; 382/103 [IMAGE AVAILABLE]

71. 4,418,242, Nov. 29, 1983, Coordinate reading apparatus; Tsutom Kouno, 178/19, 18 [IMAGE AVAILABLE]

72. 4,365,235, Dec. 21, 1982, Chinese/Kanji on-line recognition system; Evon C. Greanias, et al., 382/189; 178/30; 364/920.4, 926.8, 927.1, 927.2, 927.6, 927.64, 943, 943.43, 943.44, 947, 947.2, 949.5, 963, 963.3, DIG.2; 382/202, 226; 400/110 [IMAGE AVAILABLE]

73. 4,307,613, Dec. 29, 1981, Electronically focused ultrasonic transmitter; Martin D. Fox, 73/626; 128/661.01; 367/105 [IMAGE AVAILABLE]

74. 4,298,874, Nov. 3, 1981, Method and apparatus for tracking objects; Jack Kuipers, 342/463, 386, 458 [IMAGE AVAILABLE]

75. 4,128,324, Dec. 5, 1978, Three-dimensional photography using incoherent light; Alfred Seeger, 396/330, 324 [IMAGE AVAILABLE]

76. 3,996,590, Dec. 7, 1976, Method and apparatus for automatically detecting and tracking moving objects and similar applications; Calvin Miles Hammack, 342/465, 107, 126; 364/456, 460, 516 [IMAGE AVAILABLE]

77. 3,867,616, Feb. 18, 1975, AUTOMATED DESIGNING; Theodore H. Korelitz, et al., 364/512, 153, 189, 917, 917.3, 920.4, 921.4, 921.8, 927.1, 927.2, 927.4, 929.3, 943, 943.1, 947, 947.2, 964, 964.5 [IMAGE AVAILABLE]

78. 3,641,685, Feb. 15, 1972, METHOD AND APPARATUS FOR MONITORING STUDENTS' ACTIONS; Jakob Zawels, et al., 434/336 [IMAGE AVAILABLE]

79. 3,580,978, May 25, 1971, VISUAL **DISPLAY** METHOD AND APPARATUS; William C. Ebeling, 434/43; 348/36, 123; 353/11, 30 [IMAGE AVAILABLE]

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=> file j
FILE 'JPOABS' ENTERED AT 14:39:31 ON 11 DEC 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *     J A P A N E S E   P A T E N T   A B S T R A C T S       *
  *                                                             *
  * CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION  *
  * DATE OF MAY 1996.                                          *
  * THE LATEST GROUPS RECEIVED ARE: PAJ535 & PAJ536.            *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> s l1
          479 MATHEMATIC###
        13198 EXPRESSION#
        15965 EQUATION#
       263042 POINT?
         3079 STYLUS
         8498 PEN#
        71569 TRAC?
L8       1257 (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT? OR
STY
```

```
                LUS OR PEN# OR TRAC?)
=> s l2
         45089 RELATIVE
        204901 PLACE?
         19325 LOCATION#
L9         453 RELATIVE(7A)(PLACE? OR LOCATION#)
=> s l3
         26115 TOUCH?
          6710 DIGITIZ?
          1204 OT
             2 DIGITIS?
             0 DIGITIZ? OT DIGITIS?
                 (DIGITIZ?(W)OT(W)DIGITIS?)
L10      26115 TOUCH? OR (DIGITIZ? OT DIGITIS?)
=> s l4
           479 MATHEMATIC###
         13198 EXPRESSION#
         15965 EQUATION#
        263042 POINT?
          3079 STYLUS
          8498 PEN#
         71569 TRAC?
          1257 (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT? OR
STY
                LUS OR PEN# OR TRAC?)
         45089 RELATIVE
        204901 PLACE?
         19325 LOCATION#
           453 RELATIVE(7A)(PLACE? OR LOCATION#)
L11          0 L1 AND L2
=> s l1 an dl2
MISSING OPERATOR 'L1 AN'
=> s l1 and l2
           479 MATHEMATIC###
         13198 EXPRESSION#
         15965 EQUATION#
        263042 POINT?
          3079 STYLUS
          8498 PEN#
         71569 TRAC?
          1257 (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT? OR
STY
                LUS OR PEN# OR TRAC?)
         45089 RELATIVE
        204901 PLACE?
         19325 LOCATION#
           453 RELATIVE(7A)(PLACE? OR LOCATION#)
```

```
L12           0 L1 AND L2
=> s l3
          26115 TOUCH?
           6710 DIGITIZ?
           1204 OT
              2 DIGITIS?
              0 DIGITIZ? OT DIGITIS?
                  (DIGITIZ?(W)OT(W)DIGITIS?)
L13       26115 TOUCH? OR (DIGITIZ? OT DIGITIS?)
=> s l13 and l8
L14           5 L13 AND L8
=> s l13 and l9
L15           3 L13 AND L9
=> d l14 1-5

1.  08-95702, Apr. 12, 1996, METHOD AND DEVICE FOR CORRECTING COORDINATE
INPUT DETECTION POSITION; KIYOKAZU NARITA, G06F 3/03

2.  04-268905, Sep. 24, 1992, METHOD FOR DESIGNATING POLISHING RANGE BY
POLISHING DEVICE; KENICHI KAWADA, G05B 19/42; B24B 51/00; G05B 19/403

3.  04-136217, May 11, 1992, ELLIPTICAL UNEVEN CROSS-SECTIONAL POLYESTER
FIBER; TETSUO TSUKAMOTO, et al., D01F 6/84; D01D 5/253; D01F 6/62; D01F
6/92

4.  04-14111, Jan. 20, 1992, ROBOT POSITIONING CONTROLLER; KAZUYO
IWAMOTO, G05B 19/42; B25J 9/16; G05D 3/12

5.  57-199813, Dec. 7, 1982, PRODUCTION OF THICK AND THIH YARN; KOUZOU
KIYOMITSU, D01F 6/62
=> d l13 and l5
'L5' IS NOT VALID HERE
=> s l13 and l5
            479 MATHEMATIC###
          13198 EXPRESSION#
          15965 EQUATION#
         263042 POINT?
           3079 STYLUS
           8498 PEN#
          71569 TRAC?
           1257 (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT? OR
STY
                LUS OR PEN# OR TRAC?)
          45089 RELATIVE
         204901 PLACE?
          19325 LOCATION#
            453 RELATIVE(7A)(PLACE? OR LOCATION#)
```

```
         26115 TOUCH?
          6710 DIGITIZ?
          1204 OT
             2 DIGITIS?
             0 DIGITIZ? OT DIGITIS?
                 (DIGITIZ?(W)OT(W)DIGITIS?)
L16          0 L13 AND L5
=> d l13  4 ab
```

08-167749 L13: 4 of 26115

ABSTRACT:

PURPOSE: To prevent discharge from a connecting surface and preserve parallelism of an electrode by connecting the electrode to a current conductor through a conductor of Young's modulus of specific value or less and contacting the electrode with the current conductor closely.

CONSTITUTION: A glow discharge is generated between electrodes 1 and 2 and a laser light is generated. The electrode 1 is connected to a current conductor 4 through an elastic conductor 3 of the Young s modulus of 4×10<SP>10</SP>(N/m) or less. The electrode 1 is astene to the current conductor 4 with screws 5 and 6. Therefore the electrode 1, the current conductor 4 and the elastic conductor 3 are **touched** closely and no glow discharge is generated from the connecting surface. Adjusting tightening torque of the screws 5 and 6, the parallelism between the electrode 1 and 2 is preserved.

=> d l4 3 kwic

US PAT NO: 5,583,514 [IMAGE AVAILABLE] L4: 3 of 976

SUMMARY:

BSUM(6)

The . . . provide the exact position of these satellites in terms of azimuth and altitude, or alternatively in latitude, longitude and altitude, **relative** to certain **locations** on Earth. Since most antennas are not located precisely at these Earth locations, when using such log book information, the. . .

DETDESC:

DETD(15)

Determining . . . it contain sufficient information to accurately determine the position of the satellite in three dimensions with respect to the known **point**, such that the geometric **equations** set forth above can be applied to determine the position of the satellite with respect to the new point or. . .
=> d l4 29 kwic

US PAT NO: 5,557,438 [IMAGE AVAILABLE] L4: 29 of 976

DETDESC:

DETD(53)

Lines . . . 11(a) propagate. Angles 208 between radii 210 and 211 and angle 209 between radii 211 and 212 which are measured **relative** to coordinate X represent the **location** of points 202, 203 and 204 and equal angles 188 and 187 and also equal the rotational angles of the. . .

DETDESC:

DETD(88)

The . . . side of a polygon having sides including side mirrors and secondary mirrors all of whose planes intersect in one common **point** on rotational axis of the polygon and satisfied the **mathematical** formula:

DETDESC:

DETD(107)

FIG. . . . point 242 located on axis Z, the incident beam 232 that hits mirror 231 at hitting point 234 and is **placed** at angle .theta. **relative** to it. Original intersection point 233 and beam 260 (that is reflected out of the system from hitting point 265. . . on mirror 231) are both oriented toward last/original intersection point 233 that is located on axis Z. Beam 260 is **placed** at an angle 180-.theta.-2.alpha. **relative** to mirror 232.
=> d l4 16 kwic

US PAT NO: 5,572,218 [IMAGE AVAILABLE] L4: 16 of 976

DETDESC:

DETD(111)

Once . . . similar equation to that of Equation (25), the precise position of the landing gear can also be computed if its **location** **relative** to top side antenna 34 in the runway coordinate system 46 is precisely surveyed beforehand.

DETDESC:

DETD(115)

However, . . . pseudolite 26(1) with little or no cross track (i.e. lateral) deviation. Under these circumstances, as is evident from the linearized **Equations** (35)-(37), the cross **track** component .delta.x.sub.CT of precise position change vector .delta.x will be unobservable during initialization. Thus, the resolved integer ambiguities n.sub.25(i) and

```
=> d his
     (FILE 'USPAT' ENTERED AT 14:01:43 ON 11 DEC 96)
L1         13165 S (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT?
OR
L2         50740 S RELATIVE(7A)(PLACE? OR LOCATION#)
L3         86117 S TOUCH? OR (DIGITIZ? OT DIGITIS?)
L4           976 S L1 AND L2
L5           146 S L4 AND L3
L6            95 S (DISPLAY? OR SCREEN#) AND L5
L7            79 S (HANDWRIT? OR SCRIPT#### OR HAND) AND L6
     FILE 'JPOABS' ENTERED AT 14:39:31 ON 11 DEC 96
L8          1257 S L1
L9           453 S L2
L10        26115 S L3
L11            0 S L4
L12            0 S L1 AND L2
L13        26115 S L3
L14            5 S L13 AND L8
L15            3 S L13 AND L9
L16            0 S L13 AND L5
```

1. 5,105,468, Apr. 14, 1992, Time delay neural network for printed and cursive handwritten character recognition; Isabelle Guyon, et al., 382/158, 187; 395/22 [IMAGE AVAILABLE]
=> d acc 5262760

1. 5,262,760, Nov. 16, 1993, Modifying a graphics display image; Kazuaki Iwamura, et al., 345/145, 115 [IMAGE AVAILABLE]
=> s (handwritten of handwriting) and (relative(3a)(position# or palce####))(4a)characters
          1374 HANDWRITTEN
          1087 HANDWRITING
             1 HANDWRITTEN OF HANDWRITING
                 (HANDWRITTEN(1W)HANDWRITING)
SEARCH ENDED BY USER
=> s (handwritten or handwriting) and (relative(3a)(position# or palce####))(4a)characters
          1374 HANDWRITTEN
          1087 HANDWRITING

        847173 RELATIVE
       1165734 POSITION#
           257 PALCE####

SEARCH ENDED BY USER
=> s (handwritten or handwriting) and (relative(3a)(position# or place####))(4a)characters
          1374 HANDWRITTEN
          1087 HANDWRITING

        847173 RELATIVE
       1165734 POSITION#
       1186551 PLACE####

        109027 CHARACTERS
           138 (RELATIVE(3A)(POSITION# OR PLACE####))(4A)CHARACTERS
L1   5 (HANDWRITTEN OR HANDWRITING) AND (RELATIVE(3A)(POSITION# OR PL
                ACE####))(4A)CHARACTERS
=> d l1 1-5

1. 5,502,803, Mar. 26, 1996, Information processing apparatus having a gesture editing function; Hiroichi Yoshida, et al., 395/146, 155, 161 [IMAGE AVAILABLE]

2. 5,331,431, Jul. 19, 1994, Method and apparatus for transmitting and receiving encoded data; Leon Jasinski, 358/462, 448, 453 [IMAGE

AVAILABLE]

3. 5,262,760, Nov. 16, 1993, Modifying a graphics display image; Kazuaki Iwamura, et al., 345/145, 115 [IMAGE AVAILABLE]

4. 4,718,102, Jan. 5, 1988, Process and apparatus involving pattern recognition; Hewitt D. Crane, et al., 382/185, 187, 202, 227 [IMAGE AVAILABLE]

5. 4,561,105, Dec. 24, 1985, Complex pattern recognition method and system; Hewitt D. Crane, et al., 382/185, 209 [IMAGE AVAILABLE]

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=> file j
FILE 'JPOABS' ENTERED AT 15:28:46 ON 06 AUG 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *     J A P A N E S E   P A T E N T   A B S T R A C T S       *
  *                                                             *
  * CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION  *
  * DATE OF DECEMBER 26, 1994                                   *
  * THE LATEST GROUPS RECEIVED ARE: C1292 E1651, M1731 & P1851. *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> s l1
          1178 HANDWRITTEN
           893 HANDWRITING

         39182 RELATIVE
        445493 POSITION#
        179254 PLACE####
         19211 CHARACTERS
             9 (RELATIVE(3A)(POSITION# OR PLACE####))(4A)CHARACTERS
L2           0 (HANDWRITTEN OR HANDWRITING) AND (RELATIVE(3A)(POSITION# OR
 PL
               ACE####))(4A)CHARACTERS
=> s relative(3a)(position# or placement#)
         39182 RELATIVE
        445493 POSITION#
          1139 PLACEMENT#
L3         8605 RELATIVE(3A)(POSITION# OR PLACEMENT#)
=> s l3(p)character#
         53003 CHARACTER#
L4         158 L3(P)CHARACTER#
=> s (digitiz### or digitis###) and l4
          6003 DIGITIZ###
             2 DIGITIS###
L5           3 (DIGITIZ### OR DIGITIS###) AND L4
=> d l5 1-3

1.  62-233893, Oct. 14, 1987, RECOGNIZING METHOD FOR HANDWRITTEN
```

CHARACTER; TETSUHARU AOKI, et al., G06K 9/62

2. 60-126777, Jul. 6, 1985, CHARACTER EXTRACTING SYSTEM; YASUAKI NAKANO, et al., G06K 9/36; G06K 9/34

3. 59-100952, Jun. 11, 1984, INPUT DEVICE OF GRAPHIC INFORMATION; MASAAKI YAMADA, G06F 3/16; G06K 11/06
=> d l5 1 kwic

62-233893 L5: 1 of 3

ABSTRACT: . . .

calculation easily occurs by determining the plus/ minus binary code of the discontinuous part of the input curve of a **character** according to the **relative** **position** relation between end points of a segment which is the discontinuous line.

CONSTITUTION:This method consists of a **digitizer** 1 which encodes input handwritten characters digitally, a control part 2 which performs recognition based on the digital signal from the **digitizer** 1, a discontinuous point detection part 3 which detects the discontinuous point based on the signal, a curvature calculating part. . .
=> d l5 2 kwic

60-126777 L5: 2 of 3

ABSTRACT:

PURPOSE:To distinguish automatically a black character describing frame and a described character by **digitizing** an input form, extracting a profile from a binary picture and selecting a predetermined condition from the extracted profile so. . . the profile.

CONSTITUTION:A control section 2 controlling the entire operation is connected to an internal bus 1 of the **character** extracting system, the form image on a form 3 is scanned by a photoelectric converter 4 and a binary picture. . . coordinate is extracted to form the profile of a new coordinate sequence tying the extracted folding point pairs. Then the **character** with decided **relative** **position** to the profile is extracted so as to distinguish automatically the black **character** describing frame and the described **character**.
=> d l5 3 kwic

59-100952 L5: 3 of 3

ABSTRACT: . . .

to feed both the graphic information and the character information by using both the designation of position done by a **digitizer** and the designation of characters done by a sound input device.

CONSTITUTION:Both the positions of **characters** and the start of a sound input mode are designated by an input button of a cursor 3. This sound. . . of an input button for the next cursor position or in a lapse of a fixed period of time. The **relative** **position** of the cursor 3 to a tablet 1 is converted into the numerical value by the operation of the input. . . recognizing part 7 via a mike 4 and a sound input device. Then this sound waveform is recognized as the **character** information, and the digital codes corresponding to relevant **characters** are supplied to the processor 6. The processor 6 stores the signals sent from a cursor position detecting part 5. . .

```
=> d his
     (FILE 'USPAT' ENTERED AT 15:08:30 ON 06 AUG 96)
L1             5 S (HANDWRITTEN OR HANDWRITING) AND (RELATIVE(3A)(POSITION#
 OR
     FILE 'JPOABS' ENTERED AT 15:28:46 ON 06 AUG 96
L2             0 S L1
L3          8605 S RELATIVE(3A)(POSITION# OR PLACEMENT#)
L4           158 S L3(P)CHARACTER#
L5             3 S (DIGITIZ### OR DIGITIS###) AND L4
=> file uspat
FILE 'USPAT' ENTERED AT 15:31:35 ON 06 AUG 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                W E L C O M E   T O   T H E                    *
  *          U. S.   P A T E N T   T E X T   F I L E              *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> d l1  3 kwic

US PAT NO:     5,262,760 [IMAGE AVAILABLE]              L1: 3 of 5
```

DETDESC:

DETD(70)

FIG. 3 shows an example of input of characters. Here, the patterns of **handwritten** characters are replaced by shaped patterns of the characters.

DETDESC:

Set	Items	Description
S1	2401	HANDWRITTEN
S2	218454	PRINTING
S3	221603	CALCULAT?
S4	78	(HANDWRITTEN OR PRINTING)(N)CALCULAT?
S5	1	HANDWRITTEN(W)CALCULAT?
S6	2	(HANDWRITTEN OR PEN-BASED)(N)CALCULAT?
S7	1	6 NOT 5
S8	2479	HANDWRITTEN OR PEN(W)BASED
S9	3	S8(N)S3
S10	1	9 NOT (5 OR 7)

File 345:INPADOC/Fam.& Legal Stat. 1995/UD=9531
(c) 1995 European Patent Office
*File 345: Updated through 9531. More recent updates forthcoming.
** Family displays NOW $12.50 ea. Country displays now $5.45 ea. **
File 347:JAPIO OCT 1976-1995/APR.
(c) JPO & JAPIO
File 348:EUROPEAN PATENTS 1978-1995/AUG W5
(c) 1995 European Patent Office
*File 348: Fulltext is forthcoming. See HELP NEWS 348 for more information.
File 351:DERWENT WPI 1981-1995/UD=9533;UA=9527;UM=9522
(c)1995 Derwent Info Ltd

5/5/1 (Item 1 from file: 345)
DIALOG(R)File 345:INPADOC/Fam.& Legal Stat.

12249153
Basic Patent (No,Kind,Date): WO 9415271 A1 940707 <No. of Patents: 003>

PATENT FAMILY:
UNITED STATES OF AMERICA (US)
Patent (No,Kind,Date): US 5428805 A 950627
METHOD AND APPARATUS FOR RECOGNIZING AND PERFORMING HANDWRITTEN CALCULATIONS (English)
Patent Assignee: MORGAN MICHAEL W (US)
Author (Inventor): MORGAN MICHAEL W (US)
Priority (No,Kind,Date): US 994950 A 921222
Applic (No,Kind,Date): US 994950 A 921222
National Class: * 395800000; 364231200; 364231300; 364231310; 364237200; 364237500; 364286300; 364286100; 345173000; 345179000
IPC: * G06F-003/033; G06F-003/14; G06F-009/06
Derwent WPI Acc No: * G 94-234903; G 94-234904
Language of Document: English

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
Patent (No,Kind,Date): WO 9415271 A1 940707
PEN-BASED CALCULATOR (English)
Patent Assignee: MORGAN MICHAEL W (US)
Author (Inventor): MORGAN MICHAEL W (US)
Priority (No,Kind,Date): US 994950 A 921222
Applic (No,Kind,Date): WO 93US10521 A 931102
Designated States: (National) CA; JP (Regional) AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
Filing Details: WO 130000 With international search report; Before expiration of time limit for amending the claims and to be republished in the event of the receipt of the amendments
IPC: * G06F-003/023; G06F-003/14; G06F-003/05; G06F-009/22; G06F-015/02; G06F-015/419; G06F-015/44
Derwent WPI Acc No: * G 94-234903; G 94-234904; G 94-234903
Language of Document: English
Patent (No,Kind,Date): WO 9415272 A1 940707
PEN-BASED ELECTRONIC TEACHING SYSTEM (English)
Patent Assignee: MORGAN MICHAEL W (US)
Author (Inventor): MORGAN MICHAEL W (US)
Priority (No,Kind,Date): US 82031 A 930624; US 994950 A 921222
Applic (No,Kind,Date): WO 93US10673 A 931104
Designated States: (National) CA; JP (Regional) AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE

Filing Details: WO 100000 With international search report
IPC: * G06F-003/023; G06F-003/03; G06F-003/147; G06F-013/10; G06F-015/44; G06F-003/18
Derwent WPI Acc No: * G 94-234903; G 94-234904; G 94-234904
Language of Document: English

7/5/1 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI

008905647 WPI Acc No: 92-032916/04
XRPX Acc No: N92-025043 *Image available*
Digitising and segmenting appts. for signature verification - has electrical transducer for generating three electrical digital position signals characterising trajectory of handwriting movement; HANDWRITING
Patent Assignee: (ECOL-) ECOLE POLYTECHNIQUE
Author (Inventor): PLAMONDON R
Number of Patents: 002
Number of Countries: 017
Patent Family:

CC	Number	Kind	Date	Week	
US	5077802	A	911231	9204	(Basic)
WO	9214219	A1	920820	9236	

Priority Data (CC No Date): US 653672 (910211)
Applications (CC,No,Date): WO 92CA53 (920210); US 553672 (910211)
Language: English
EP and/or WO Cited Patents: US 3699517; US 3955178; US 4495644; WO 8606525
Designated States
(National): CA; JP
(Regional): AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LU; MC; NL; SE
Abstract (Basic): US 5077802
The handwriting digitising appts. comprises an electrical transducer for generating three electrical digital position signals characterising a trajectory of the handwriting movement. The apparatus comprises a device for low-pass filtering the electrical signals and a device for deriving the electrical signals by predetermined time and transfer functions for generating Vx and Vy electrical components which represent respectively speeds of the point according to X and Y axes of a cartesian reference. A device is also provided for calculating V sigma and V74 values from the Vx and Vy values.
The apparatus also comprises a device for calculating handwritten components and handwritten strings, where each of the handwritten components is delimited by two successive liftings of the point along the trajectory. Each of the handwritten strings is delimited by two successive portions of the trajectory where the V theta value is higher than a predetermined angular speed value and the V sigma value is lower than a predetermined curvilinear speed value.
@(49pp Dwg.No.2A/19)@
File Segment: EPI
Derwent Class: T04; R28;
Int Pat Class: G06K-009/00
Manual Codes (EPI/S-X): T04-D07E

10/5/1 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI

009967190 WPI Acc No: 94-234903/28
Related WPI Accession(s): 94-234904

XRPX Acc No: N94-185638
Pen-based, handwritten input calculator - has electronic input surface which user writes calculations with stylus to calculate mathematical calculations
Patent Assignee: (MORG/) MORGAN M W
Author (Inventor): MORGAN M W
Number of Patents: 002
Number of Countries: 019
Patent Family:

CC	Number	Kind	Date	Week	
WO	9415271	A1	940707	9428	(Basic)
US	5428805	A	950627	9531	

Priority Data (CC No Date): US 994950 (921222)
Applications (CC,No,Date): WO 93US10521 (931102)
Language: English
EP and/or WO Cited Patents: US 4141073; US 4151596; US 4578811
Designated States
(National): CA; JP
(Regional): AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
Abstract (Basic): WO 9415271 A
The calculator recognises handwritten inputs in which the inputs include mathematical operators and operands. Calculations are performed by the calculator indicated by the mathematical operators and operands.
The calculator comprises an electronic input surface, a stylus for tracing on the electronic input surface and a processing circuit. The processing circuit is coupled to the electronic input surface for recording and recognising the movements of the stylus. The processing circuit also converts the characters into mathematical expressions and performs calculations indicated by the mathematical expressions.
ADVANTAGE - Recognises all types of calculations and mathematical functions thereby providing same capabilities as most powerful calculators.
Dwg.1/58
Abstract (US): 9531 US 5428805 A
A pen-based calculator recognises handwritten input. The calculator includes a display simulating a sheet of paper, and a stylus simulating a pen. The user writes a calculation on the calculator as if it were a piece of scratch paper.
The calculator uses handwriting recognition to identify the various elements of the calculation, performs the calculation, and then displays the result at an appropriate location. A number of mathematical expressions inscribed on the input surface may be linked together.
ADVANTAGE - Recognises all types of calculations and mathematical functions, thus providing same capabilities as most powerful calculators.
Dwg.58A/58
File Segment: EPI
Derwent Class: T01; T04;
Int Pat Class: G06F-003/023; G06F-003/033; G06F-003/05; G06F-003/14; G06F-009/06; G06F-009/22; G06F-015/02; G06F-015/419; G06F-015/44
Manual Codes (EPI/S-X): T01-J01; T04-D07E; T04-F04

```
SYSTEM:OS  - DIALOG OneSearch
  File   2:INSPEC  1969-1995/Aug W4
         (c) 1995 Institution of Electrical Engineers
  File   8:Ei Compendex*Plus(TM)  1970-1995/Oct W4
         (c) 1995 Engineering Info. Inc.
?s handwritten or pen(w)based
           2597  HANDWRITTEN
           3396  PEN
        1010897  BASED
            218  PEN(W)BASED
      S1    2806  HANDWRITTEN OR PEN(W)BASED
?s calculat?
      S2  925145  CALCULAT?
?s s1(n)s2
           2806  S1
         925145  S2
      S3       0  S1(N)S2
?c 1 and 2
           2806  1
         925145  2
      S4      89  1 AND 2
?s handwritten(w)calculat?
           2597  HANDWRITTEN
         925145  CALCULAT?
      S5       0  HANDWRITTEN(W)CALCULAT?
?s pen(w)based(w)calculat?
           3396  PEN
        1010897  BASED
         925145  CALCULAT?
      S6       0  PEN(W)BASED(W)CALCULAT?
```

File 275:Computer Database(TM) 1983-1995/Sep 08
(c) 1995 Information Access Co
?ss (handwritten or pen(w)based)(n)calculat?
S1 1213 HANDWRITTEN
S2 9206 PEN
S3 255644 BASED
S4 3755 PEN(W)BASED
S5 26456 CALCULAT?
S6 3 (HANDWRITTEN OR PEN(W)BASED)(N)CALCULAT?

6/9/2
DIALOG(R)File 275:Computer Database(TM)

01552961 SUPPLIER NUMBER: 13051535 (THIS IS THE FULL TEXT)
The Cool One cadges the real inside dope at Shaffer's soggy show. (Rumor Central) (Column)
Katt, Spencer F.
PC Week, v9, n50, p182(1)
Dec 14, 1992
DOCUMENT TYPE: Column ISSN: 0740-1604 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT
WORD COUNT: 612 LINE COUNT: 00047

TEXT:

The Power Meower presided last week in -- gadzooks! -- rainy California, gossiping and carrying on with the high and mighty at Dick Shaffer's PC Outlook conference.

As usual, Jim Manzi was cocky and amusing; Philippe Kahn, roiled and defensive; Eckhard Pfeiffer, not yet a Toastmasters graduate.

Luncheon speaker Andy Grove asserted that the combination of Indeo desktop video and the Pentium processor would constitute a steroid shot for the PC industry. The analogy was unfortunate, thought Spencer, an acquaintance of late NFL lineman Lyle Alzado.

Kickoff speakers Sculley and this Gates guy sleepwalked through their presentations and went on their way. As usual, the real fun stuff took place offstage.

Scanner skinny

One spirited conversation among pen pundits focused on "source data capture," the fine art of digitizing everything you can as conveniently as possible. One described a device that looked strangely like a Mont Blanc pen. The first iteration of this prototype was a **pen**-**based** **calculator**, but future versions could function as a one-line scanner.

Imagine a scanner the size of a pen that could scan articles with the flick of a wand and save them for downloading to a PC.

IBM, DEC and HP all have seen the device, sayeth Spencerian sources -- and supposedly love it.

Up in the hotel elevator could be seen IBM Personal Computer Co. prez Bob Corrigan and Son-san, the shot-caller at Softbank Japan. Seems IBM wants to jump-start ValuePoint sales in Japan, where IBM in recent times has gotten creamed.

In the states, Corrigan con- fided to one Katt confidante, he "could sell his shoes" right now, so hot are his PS/1s and ValuePoints. "I picked the most wildly optimistic number I could imagine," he said, "and I was low."

No matter how hard he tries, the Katt simply can't get his fans to say anything nice about "the new IBM." Last week two different plaintiffs dinged Not-As-Big Blue for partitioning the Model 77 with 80M bytes of preloaded OS/2 and 300M bytes of empty, inaccessible space.

IBM also recently got bad marks from fellow partners in IDAPI, the

IBM also recently got bad marks from fellow partners in IDAPI, the database-access consortium composed of IBM, WordPerfect, Novell and Borland. IBM was deigned worst at returning phone calls and nixed the term everyone else wanted: VIDAPI, for Vendor Independent Database Application Programming Interface.

One technology that is catching on is the laptop PC. Microsoft/Intel research says 6 million units will be shipped in 1992 -- 8 million in 1993.

There will be plenty of PCMCIA cards to put in them, but what type? Type IIs proliferate today, while Type III cards are already on the drawing board. Few but Spencer himself, however, know of the prototypes for Type IV PCMCIA, being designed in -- where else? -- Japan.

While today's PCMCIA cards are designed for portability, these double-thickness PCMCIA cards are aimed at desktop machines, whose footprints will shrink to shoebox size when designs hit the market in 1994.

Finally -- and predictably -- promoters of the Windows & OS/2 expo have griped that their show is anything but "not long for this world," as suggested here last week. Indeed, next month's event in San Jose, Calif., is expected to draw a record 20,000. Nevertheless, the Dauntless One insists, expect a name change.

Spencer politely asks that you remember the needy during the holiday season, including his favorite charity, Toys for Tots. Meanwhile, he'll pay $20 to anyone who sends him a copy of the Iron Butterfly album called "Pentium." -- ...BRB

FILE SEGMENT: CD File 275
?t 6/9/3

6/9/3
DIALOG(R)File 275:Computer Database(TM)
(c) 1995 Information Access Co. All rts. reserv.

01520202 SUPPLIER NUMBER: 12237704 (THIS IS THE FULL TEXT)
Recognizing all possible capabilities. (Apple's Newton portable computer)
Nor, Henry
MacWEEK, v6, n22, p10(1)
June 8, 1992
ISSN: 0892-8118 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 657 LINE COUNT: 00050

ABSTRACT: Apple's Newton portable computer will offer graphics and mathematical symbol and text interpretation in addition to some yet-to-be-developed sophisticated graphics features. The handheld computer eventually will be able to recognize cursive writing, foreign alphabets, musical notations and special symbol sets with the help of modules that can be dropped into appropriate slots on the machine. The software will incorporate an engine that has the power of MacDraw and the intuitive feel of MacPaint. The software will be able to recognize symmetries in sketched input and will provide automatic alignment and concentricity. The prototype that Apple displayed in May 1992 recognized some very sloppy writing, with only a few errors. The new software will learn to recognize sloppy handwriting and will look up words in its own dictionary if it cannot read a letter.
TEXT:

By Henry Norr

Cupertino, Calif. -- Newton from the start will be able to interpret not only printed text, but also graphics and mathematical expressions, and a flexible "recognition architecture" will make adding further capabilities- for cursive writing, foreign alphabets, musical notation and other special symbol sets, for example-a simple matter of dropping in new

software modules. Users will be able to print anywhere on the device's small screen. Input shows up first as a bit map, but after a moment's delay -- to ensure you've finished a word, according to Apple -- Newton converts what you printed into digital text, in a point size corresponding to the input.

Newton is designed to be "writer-independent," but also adaptive. In other words, even without prior training it will recognize letters (initially only from the Latin alphabet, with other scripts to follow), regardless of differences in individual printing style, but over time it is supposed to learn from its mistakes: Suppose, for example, that the software is at first uncertain whether a character form you have entered is an "e" or "c." Newton will look up the word in its dictionary to determine the most likely choice. If it's wrong, you'll have to correct it by reprinting more clearly. But the next time you print that character, Newton should get it right.

The prototypes Apple showed last month managed to cope with some fairly sloppy printing, though not without mistakes. Contrary to some earlier reports, however, first-generation Newtons will not recognize cursive handwriting. But Larry Tesler, Apple vice president for advanced products and chief of the Newton project, said, "Things are moving very quickly in this field. Cursive is not many years off."

The software already includes enough mathematical intelligence to make Newton a **pen**-**based** **calculator**, although Apple didn't emphasize the point. When the user writes a column of numbers, then draws a line underneath, Newton will automatically enter the sum; when it sees a [square root of] (square-root symbol), it will generate the square root.

The software uses a technique Apple calls "two-dimensional spatial parsing," instead of depending on the order in which numbers are entered, to interpret mathematical expressions. If the user, for example, writes 3/7=, it will display 0.4286; should the user add "+ 4" next to the 3 and extend the line over the 7, it will instantly recalculate the expression and display the answer "1." Expressions can be edited by clicking and dragg ng or crossing out and rewriting elements; the new result is displayed in real time.

The software also incorporates a graphics engine that Apple said "combines the feel of MacPaint with the power of MacDraw." Without launching a special application or even selecting a special tool from a palette, users can doodle or sketch at any time; at the touch of a button, Newton will automatically turn the sketch into an object-oriented drawing.

The software recognizes symmetries in sketched input: If you draw a roughly square object, Newton will generate a precise square. Likewise, the engine can provide automatic alignment and concentricity: If you draw a new line close to the center point of an existing line or object, or a circle roughly concentric with an existing shape, the system will assume you want it to snap the new line to the exact center point of the existing one or make the two objects concentric. (All such automatic interpretations can be overridden.)

To cut away a portion of a line -- for example, to open a door in a floor plan -- the user has only to scribble over the part of the line to be removed. Accomplishing the same task in a standard Mac drawing package would require several steps, including some fine mousing.

SPECIAL FEATURES: illustration; photograph
COMPANY NAMES: Apple Computer Inc.--Product development
DESCRIPTORS: Product Development; Laptop/Portable Computer; Optical Character Recognition Software; Electronic Organizer; Hand-held computers
SIC CODES: 3571 Electronic computers; 7372 Prepackaged software
TICKER SYMBOLS: AAPL
TRADE NAMES: Apple Newton MessagePad (Personal digital assistant)--

Product development
OPERATING PLATFORM: Apple Macintosh
FILE SEGMENT: CD File 275

6/9/1
DIALOG(R)File 275:Computer Database(TM)

01596147 SUPPLIER NUMBER: 13301811 (THIS IS THE FULL TEXT)
Personal communicators. (EO Inc.'s Personal Communicator 440 and 880) (Personal Macintosh) (Product Announcement)
Bortman, Henry
MacUser, v9, n2, p249(4)
Feb, 1993
DOCUMENT TYPE: Product Announcement ISSN: 0884-0997 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 1846 LINE COUNT: 00136

ABSTRACT: EO Inc's $1,999 to $2,799 Personal Communicator 440 and $2,999 to $3,299 Personal Communicator 880 hand-held data devices use AT and T Microelectronics' 92010 Hobbit RISC-base microprocessor for efficient power consumption for the battery-operated devices. The Personal Communicators are a combination telephone, facsimile modem and pen-based computer and can be used for word processing, spreadsheets and other applications. Their major strength lies in their mobile messaging and communications features. AT and T offers a mail account with the Personal Communicator with no sign-up or monthly fees, however the user has to pay for the call when using the service.

TEXT:

I'd like to be writing a column about Newtons you know, the Personal Digital Assistants that Apple first announced would be so consumer-oriented that you'd practically be able to buy them at Radio Shack for your kid's next birthday and then turned around and confessed would probably be business productivity devices after all. The ones over which Apple is having a trademark war with Nabisco to settle once and for all whether an Apple Newton is a cookie or a computing device.

I'd like to be telling you about Newton's wireless-communications capabilities. I'd like to be giving you advice on how to connect your Newton to your Mac, where you can get translators for moving data from applications that run on one machine to those that run on the other, and how to synchronize the information you store on the two machines. I'd like to be listing prices and ship dates, showing you pictures of circuit boards and I/O ports and all the stuff that would lead you to think there's a real product coming real soon.

But Apple isn't talking.

So instead I'm going to tell you about EO's Personal Communicators. Unlike Apple, EO (415-694-7337) has announced products and ship dates. This makes the Personal Communicators infinitely more interesting than Newtons, at least temporarily. EO will likely be the first to ship what the entire computer industry has been promising for the last two years: a communications-centric portable computer. But I'm also going to rant and rave, because although the staff of EO as well as GO (the company that licenses PenPoint, the Personal Communicators' operating system) are riddled with former Apple employees and Mac enthusiasts, Personal Communicators will have near-zero connectivity with Macs when they first ship.

What They Are

The EO Personal Communicators are what you get when you cross a telephone, a fax modem, and a pen-based computer. They are computers don't

let anyone tell you differently. As such, they can be used in general-purpose computing areas such as word-processing, spreadsheets, drawing, and appointment calendars. But their design is optimized for mobile messaging and communications.

There are two models: the 440 ($1,999 to $2,799, depending on configuration) and the 880 ($2,999 to $3,299). Both are based on AT&T Microelectronics' 92010 Hobbit processor. The Hobbit is a RISC-based microprocessor that, because it draws very little power, is ideal for use in machines that run off batteries. The 440's processor runs at 20 megahertz, the 880's at 30 megahertz. They're fast.

The 440 is the little guy: It weighs only 2.2 pounds with a standard four-hour NiCad battery (2.4 pounds with an optional seven-hour battery) and measures around 11 x 7 x 1 inches (see Figure 1). Its 640-x-480-pixel reflective screen measures 5.9 x 4.3 inches. That comes out to 110 dpi. With such a small screen, you might think the legibility would be terrible. But under normal lighting conditions, the screen is stunning and I say this as someone who hates reflective screens. On the unit EO demonstrated to MacUser back in November 1992, even 7-point type was perfectly readable under standard office fluorescent lights. Of course, if you work in the dark, you might be a little disappointed. The 880 is larger (13 x 9 x 1 inches) than the 440, with an 85-dpi backlit screen that measures 7.6 x 5.7 inches. It weighs 4 pounds.

The 440 and the 880 each provide serial and parallel ports, a keyboard connection, a communications port for attaching an optional cellular phone, and a PCMCIA (Personal Computer Memory Card International Association) expansion slot (the 880 has two). Both are available with an optional internal V.32bis fax/data modem (14.4 Kbps for data and 9,600 bps for fax). The 880 has video-out capability (VGA) and a SCSI II connector.

The optional CellPhone module ($799) attaches to the bottom of either the 440 or 880 and, as you might expect, enables data communications over a cellular connection. If you connect a standard telephone handset to the jack provided on the CellPhone module, you can make cellular voice calls.

The bundled software includes not only the PenPoint operating system but also E-mail, fax, and basic note-taking software from GO; sound-record-and-playback, **pen**-**based** **calculator**, voice-phone, and security software from EO; Personal Perspective (a combined calendar, to-do-list, and address-book application), from Pensoft; and PenTops/PenCentral, from Sitka, for sharing files with PCs. Almost all of this software, along with the operating system, is in ROM 8 megabytes' worth.

When you buy a Personal Communicator, you get a free AT&T Mail account well, sort of free. You don't have to pay any sign-up or monthly fees. You do still have to pay for the call you make when you use the service to send and receive E-mail and to receive faxes. Why AT&T Mail? Well, when you're building a communications-centric computer and the company from which you're getting the computer's microprocessor also just happens to own the nation's largest long-distance telephone system, complete with its own electronic-messaging service, odds are you're going to cut some kind of deal. Besides, if the people you need to communicate with don't also happen to be AT&T Mail users, its gateways to the Internet, CompuServe, GE Info Services, MCI Mail, SprintMail, Novell MHS, and cc:Mail should meet most of your needs unless the people you need to communicate with are Mac users.

What They Aren't

Let's start with E-mail. If you will kindly refer back to the list of gateways in the previous paragraph, you will find among them Novell MHS and cc:Mail, which together are implemented by the overwhelming majority of LAN-based E-mail users on PCs. But you don't see QuickMail or Microsoft Mail, which are the dominant LAN-based E-mail packages among Mac users.

Then there are file-sharing services. EO offers PenTops (client software for 440s and 880s) and PenCentral (TOPS-server software that runs

on a PC). So a 440 or 880 can be connected by a serial cable or modem to a PC and, using TOPS protocols, copy shared files to and from the PC. But to get to any other type of shared files with a Personal Communicator, you have to use PenCentral as a gateway. So even if you have a Mac running TOPS file-sharing software (a rare occurrence in the age of System 7 file sharing), you can't access files on the Mac directly from the EO computers.

Perhaps you're wondering about printing. Well, because AppleTalk isn't supported, neither is direct network access to PostScript printers. But that's not the end of the story. The PenPoint operating system used by EO doesn't provide a PostScript driver at all, even for serial or parallel connections. It knows how to talk to HP LaserJets and LaserJet wannabes only.

Now, something is wrong with this picture. Here we have what is arguably the most advanced mobile pen-based computer yet produced, a computer designed for communications. But it has nothing to say to today's most advanced desktop and notebook computer, the Mac. Nor can it be connected to the networks on which some 70 percent of those Macs reside.

The reason is fairly simple. Do you remember what Deep Throat advised Woodward and Bernstein as they tried to unravel the Watergate scandal? "Follow the money." And the money in the computer market is in the installed base of PCs, not Macs. Or so conventional market wisdom goes. I'm not so easily convinced. There's a reason why EO and GO have a lot of former Apple employees on their staffs. And it's the same reason why Mac users are far more likely to adopt the new technologies EO and GO are promoting than people who have been content with DOS for the last five years and who think Windows makes PCs just like Macs. The reason is that Mac users are early technology adopters.

Let's hope someone fixes this mess and soon. EO and GO both say they're committed to providing AppleTalk and Mac connectivity, but that isn't news. It would be far more inspiring to hear them announce a ship date.

There is another hope. CoActive, a company based in Belmont, California, is developing software to provide AppleTalk file-sharing and print services for a variety of computing environments in which they are currently unavailable. EO's Personal Communicators are expected to be among the devices that will benefit from CoActive's work. Stay tuned.

On an Upward Spiral

On another note, one of the more intriguing applications worth the notice of any PowerBook user is Spiral ($129), from TechWorks (512-794-8533). You can think of Spiral as a minimalist word processor optimized for note taking, with a dash of hypertext. Its focus is on helping you organize things you jot down during the course of a day rather than on editing, formatting, spell-checking, and grammar-checking word-processed documents.

Documents created with Spiral are called notebooks and can be any of three predetermined sizes: The largest (640 x 480 pixels) fills a PowerBook screen; the smallest (350 x 200 pixels) fills about a quarter of the screen. Once you've selected a notebook's size, you can't change it. Pages in a Spiral notebook behave somewhat differently from pages in a word processor--they don't scroll. If you type more text than can fit on a page, Spiral will cut the last few lines of text from the page, create a new page, and paste the overflow text onto the new page.

Notebooks are organized into sections. When you create a new section, Spiral creates a section-contents page and displays a tab sticking off the right-hand edge of the notebook that takes you directly to the contents page. As you type, you can select phrases to copy to the contents page. Clicking on a phrase on the contents page takes you directly to the page on which the original text appears. There is also a page-navigation tool that is creatively integrated with the Find command to speed up locating the information you're looking for.

DETD(72)

When . . . generates corresponding shaped patterns, and rotates/enlarges/reduces these patterns, to overlap the patterns corresponding to the characters, on the design drawings **handwritten** characters. When the shaped character rows are placed correctly, the characters from the design drawings are erased or their intensity. . .

DETDESC:

DETD(142)

Display 222 shows editing of the character cursor, corresponding to step 204, in which the **relative** **positions** of the **characters** within the character cursor are changed, so that the wording of the character cursor reads more clearly. Display 223 in. . .

```
=> d his
     (FILE 'USPAT' ENTERED AT 15:08:30 ON 06 AUG 96)
L1             5 S (HANDWRITTEN OR HANDWRITING) AND (RELATIVE(3A)(POSITION#
 OR
     FILE 'JPOABS' ENTERED AT 15:28:46 ON 06 AUG 96
L2             0 S L1
L3          8605 S RELATIVE(3A)(POSITION# OR PLACEMENT#)
L4           158 S L3(P)CHARACTER#
L5             3 S (DIGITIZ### OR DIGITIS###) AND L4
     FILE 'USPAT' ENTERED AT 15:31:35 ON 06 AUG 96
=
```

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
FILE 'USPAT' ENTERED AT 14:01:43 ON 11 DEC 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *              W E L C O M E   T O   T H E                     *
  *         U. S.   P A T E N T   T E X T   F I L E              *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> s (mathematic### or expression# or equation#)(10a)(point? or stylus or pen#
or trac?)
         30581 MATHEMATIC###
         71728 EXPRESSION#
        152774 EQUATION#

       1123063 POINT?
          8836 STYLUS
         24441 PEN#
        322754 TRAC?

L1       13165 (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT? OR
STY
               LUS OR PEN# OR TRAC?)
=> s relative(7a)(place? or location#)

        864856 RELATIVE
       1211959 PLACE?
        541717 LOCATION#

L2       50740 RELATIVE(7A)(PLACE? OR LOCATION#)
=> s touch? or (digitiz? ot digitis?)
         86117 TOUCH?
         30582 DIGITIZ?
          8106 OT
           921 DIGITIS?
             0 DIGITIZ? OT DIGITIS?
                 (DIGITIZ?(W)OT(W)DIGITIS?)
L3       86117 TOUCH? OR (DIGITIZ? OT DIGITIS?)
=> d his
     (FILE 'USPAT' ENTERED AT 14:01:43 ON 11 DEC 96)
L1       13165 S (MATHEMATIC### OR EXPRESSION# OR EQUATION#)(10A)(POINT?
OR
L2       50740 S RELATIVE(7A)(PLACE? OR LOCATION#)
L3       86117 S TOUCH? OR (DIGITIZ? OT DIGITIS?)
=> s l1 and l2
L4         976 L1 AND L2
=> s l4 and l3
L5         146 L4 AND L3
=> s (display? or screen#) and l5
```

```
 * * * * * RECONNECTED TO U.S. Patent & Trademark Office * * * * * *
SESSION RESUMED IN FILE 'USPAT' AT 10:09:08 ON 13 MAY 96
FILE 'USPAT' ENTERED AT 10:09:08 ON 13 MAY 96
=> d his
     (FILE 'USPAT' ENTERED AT 09:46:34 ON 13 MAY 96)
L1          1778 S RELATIVE(6A)(PLACEMENT OR DISTANCE# OR SPACE#)(6A)(RECOG
NIZ
L2           263 S RECOGNIZ?(6A)(HANDWRITTEN OR HANDWRITING OR SCRIPT#)
L3             1 S L1 AND L2
L4           289 S RECOGNIZ?(10A)(HANDWRITTEN OR HANDWRITING OR SCRIPT#)
L5             1 S L4 AND L1
L6            16 S (HANDWRITTEN OR HANDWRITING OR SCRIPT#) AND L1
=> d l6  8  kwic

US PAT NO:     5,398,115 [IMAGE AVAILABLE]          L6: 8 of 16

DETDESC:

DETD(5)

 After the document has been entered into the FAX machine 14, the entire
source document 26 including the **handwritten** message or graphic
information contained in the information region 42 is scanned and
quantized. Thereafter, the information is encoded and. . .

DETDESC:

DETD(18)

 The . . . when the circles have been located. After the location of
the circles, the rotational angles and the scaling factor are
**determined** from the locations and **relative** **distance** between
the circles by techniques well known to one skilled in the art. When the
orientation and scaling are known,. . .
=> d l6  13   fro


US PAT NO:     5,109,439 [IMAGE AVAILABLE]          L6: 13 of 16
DATE ISSUED:   Apr. 28, 1992
TITLE:         Mass document storage and retrieval system
INVENTOR:      Horst Froessl, Gutenbergstrasse 2-4, D-6944 Hemsbach,
                 Federal Republic of Germany
APPL-NO:       07/536,769
DATE FILED:    Jun. 12, 1990
INT-CL:        [5] G06K 9/00
US-CL-ISSUED:  382/61, 57; 364/963.1
US-CL-CURRENT: 382/305; 364/963.1
```

SEARCH-FLD: 382/57, 61; 364/225.4, 963, 963.1, 963.4
REF-CITED:

U.S. PATENT DOCUMENTS

4,358,824	11/1982	Glickman et al.	364/200
4,553,261	11/1985	Froessl	382/61
4,672,683	6/1987	Matsueda	382/57
4,748,678	5/1988	Takeda et al.	382/61
4,758,980	7/1988	Tsunekawa et al.	382/61
4,760,606	7/1988	Lesnick et al.	382/61
4,817,166	3/1989	Gonzalez et al.	382/1
4,933,979	6/1990	Suzuki et al.	382/61

ART-UNIT: 266
PRIM-EXMR: Leo H. Boudreau
ASST-EXMR: David Fox
LEGAL-REP: Walter C. Farley

ABSTRACT:
A sequence of documents is delivered to an optical scanner in which each document is scanned to form a digital image representation of the content of the document. In one embodiment, the image representation is converted into code (ASCII) and is automatically examined by data processing apparatus to select search words which meet predetermined criteria and by which the document can subsequently located. In another embodiment, the image is not converted. The search words are stored in a nonvolatile memory in code form and the entire document content is stored in mass storage, either in code or image form. Techniques for selecting the search words are disclosed.

21 Claims, 7 Drawing Figures

=> d l6 12 kwic

US PAT NO: 5,146,833 [IMAGE AVAILABLE] L6: 12 of 16

SUMMARY:

BSUM(4)

Music . . . out by hand and entered in an automated system for publication as typeset or printed sheets. The manual process of **handwriting**, revising, and/or transcribing music notation can be very laborious for the music composer. For the music publisher, the conversion of **handwritten** notation into an automated typesetting or printing system requires the manual inputting of data, and only a limited capability exists. . .

DETDESC:

DETD(13)

The . . . derived by reverse processing of notation data provided from a digital scanner 29 used to scan an original printed or **handwritten** music sheet. The input from scanner 29 can be decoded by a feature recognition algorithm through recognizer 29a to extract. . .

DETDESC:

DETD(56)

The . . . digital scanning and feature extraction systems can be used to provide notational input to the present system from printed or **handwritten** original sheets. The compressed data set BBCODE can be relatively easily derived through feature extraction, and the notation processing program. . .

DETDESC:

DETD(60)

Alternatively, . . . typing-style keyboard, or a microphone for speech input. Other examples include a `mouse`, a touch panel, an electronic pad for **handwriting** recognition, or a head pointing device. Visual feedback for differentiation of codes can be facilitated by dynamic icon representations on. . .

DETDESC:

DETD(83)

There . . . etc., must be found or analyzed to determine their minimum space required. Next, high level formatting takes place which will **determine** bar **placement** **relative** to the page. This is the basic layout of the pages which will include whether rests occur at the bottom. . .

DETDESC:

DETD(97)

Other . . . very compact form which describe many different symbol relationships and contexts. Weights SymWeights are used for setting proportions within given **spaces**, and InterObjSpace are rules describing **relative** **spaces**. These **relative** **spaces** **determine** **distances** between musical symbolic objects. Therefore classes of objects, i.e., Articulation, Dynamics, N Point Symbols (symbols with 1 origin), N point. . .

=> d l6 12 fro

US PAT NO: 5,146,833 [IMAGE AVAILABLE] L6: 12 of 16
DATE ISSUED: Sep. 15, 1992
TITLE: Computerized music data system and input/out devices using related rhythm coding
INVENTOR: Philip Y. F. Lui, 55 W. 16th St., New York, NY 10011
DISCL-DATE: Sep. 25, 2007
APPL-NO: 07/587,255
DATE FILED: Sep. 24, 1990
REL-US-DATA: Continuation-in-part of Ser. No. 332,412, Mar. 30, 1989, Pat. No. 4,958,551, which is a continuation of Ser. No. 44,839, Apr. 30, 1987, abandoned.
INT-CL: [5] G09B 15/04; G10G 3/04; G10H 7/00
US-CL-ISSUED: 84/462, 477R, 484, 611, DIG.12
US-CL-CURRENT: 84/462, 477R, 484, 611, DIG.12
SEARCH-FLD: 84/609-614, 634-643, 645, 649-652, 666-669, 462, 477R, 478, 484, DIG.12
REF-CITED:

U.S. PATENT DOCUMENTS

4,742,748	5/1988	Tateishi	84/DIG.12

ART-UNIT: 217
PRIM-EXMR: Stanley J. Witkowski
LEGAL-REP: Leighton K. Chong

ABSTRACT:
A computerized musical instrument system has a processing system for converting multiple modes of music data input into relative rhythm coded data in the format of pitch codes and relative rhythm codes for designating respective types of rhythm elements, including the pitches, as they occur in the beats or other basic music intervals of a music piece. The relative rhythm codes represent the relative proportions by which the designated rhythm elements divide each beat. In a relative rhythm coding mode, pitch and rhythm data are entered via a keyboard and relative rhythm code and control code keys. The music data may also be input in the form of MIDI formatted data, audio or digital sound input, real-time performance (keypress) data, or optically scanned data from printed music notation. The instrument system can provide various forms of outputs including synthesized sound, a display or music notation, stored music data, printed output, and related audio and/or image effects.

20 Claims, 30 Drawing Figures

=> d l6 11 kwic

US PAT NO: 5,218,530 [IMAGE AVAILABLE] L6: 11 of 16

SUMMARY:

BSUM(36)

A particular layer might be thought of as a "slice" through the skull on a plane defined by the physical **placement** of the three **detection** electrodes, **relative** to the reference electrode, whose data streams are employed to define that particular layer. The composite graphic phase space portrait. . .

DETDESC:

DETD(32)
[FILENAME].SCR is a `**script**` file written for use by invoking the AutoCAD command "**script**" from within the AutoCAD program and entering [FILENAME].SCR at the AutoCAD command prompt. It automatically calls into AutoCAD the header. . .
=> d 16 10 kwic

US PAT NO: 5,304,786 [IMAGE AVAILABLE] L6: 10 of 16

SUMMARY:

BSUM(7)

The . . . defines the character represented according to a set of rules and definitions specified by the code or "symbology" used. The **relative** size of the bars and **spaces** is **determined** by the type of coding used, as is the actual size of the bars and spaces. The number of characters. . .

DETDESC:

DETD(131)

As . . . is stored photographically on a roll of microfilm. An example of such information might be the thousands of documents--printed, typed, **handwritten**, drawn, or a combination thereof--that can be involved in a large litigation. Known computerized litigation support systems permit paralegals to. . .
=> d 16 9 kwic

US PAT NO: 5,321,749 [IMAGE AVAILABLE] L6: 9 of 16

ABSTRACT:
A system for the encryption of documents is described. A document, which may contain not only text, but also **handwriting**, pictures, charts, or

other graphic images, is converted into a bitmap. This bitmap is encrypted and printed, preferably in a. . .

SUMMARY:

BSUM(2)

This . . . device for and a method for the encryption of physical documents of a general type, including, but not limited to, **handwritten** documents and documents with pictures, so that the encrypted documents can be sent to an intended recipient by any of. . .

SUMMARY:

BSUM(3)

Many . . . on textual information and cannot preserve visible, non-textual information present in a document, such as pictures, symbols, type fonts, or **handwriting** characteristics. Other systems relating to the encryption of television images are known, but they do not lend themselves to the. . .

SUMMARY:

BSUM(9)

Documents . . . sending or transmitting documents. Although textual information contained in a fax could be encrypted, many important documents contain charts, pictures, **handwriting** and **handwritten** notations and the like, which are not suitable for ordinary textual encryption.

SUMMARY:

BSUM(19)

Yet another object of this invention is to provide a device and system to allow **handwriting** and image information to be encrypted such that it may be sent via facsimile and decrypted with a corresponding device,. . .

DETDESC:

DETD(30)

Polygonal . . . opportunity for continuous bit compression, but a big opportunity for compression using polygonal compression. Wavy lines 91

represent text or **handwriting**, with a substantial white area left at 28. All white area 28 provides the opportunity for polygonal compression. For this. . .

DETDESC:

DETD(33)

Decryption . . . lines, dots (or squares), and spaces. As each scan line is read, (step 108 of FIG. 10) the decryption engine **determines**, from the **spaces** between the ".vertline." characters, the **relative** spacing of the characters on the page. To provide orientation, a "start of page code" may be provided. The preferred. . .
=> d l6 9 fro

US PAT NO: 5,321,749 [IMAGE AVAILABLE] L6: 9 of 16
DATE ISSUED: Jun. 14, 1994
TITLE: Encryption device
INVENTOR: Richard Virga, 55 Mill Plain Rd., #26-9, Danbury, CT 06811
APPL-NO: 07/948,055
DATE FILED: Sep. 21, 1992
INT-CL: [5] H04N 1/44
US-CL-ISSUED: 380/18; 283/73; 380/54
US-CL-CURRENT: 380/18; 283/73; 380/54
SEARCH-FLD: 283/73; 380/18, 54
REF-CITED:

U.S. PATENT DOCUMENTS

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4,949,381	8/1990	Pastor	380/51
4,957,689	9/1990	Ohnishi et al.	358/296
4,972,475	11/1990	Anselmo	380/54
4,985,919	1/1991	Naruse et al.	380/18
4,989,244	1/1991	Naruse et al.	380/20
4,994,926	2/1991	Gordon et al.	358/400
5,001,749	3/1991	Iggulden et al.	380/18
5,001,750	3/1991	Kato et al.	380/18
5,058,158	10/1991	Matias et al.	380/14
5,062,136	10/1991	Gattis et al.	380/18
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OTHER PUBLICATIONS

Knuth, Donald E., The Art of Computer Programming, 2d Ed., vol. 2, "Seminumerical Algorithms," pp. 29-31.

ART-UNIT: 222
PRIM-EXMR: Stephen C. Buczinski
LEGAL-REP: Kenyon & Kenyon

ABSTRACT:
A system for the encryption of documents is described. A document, which may contain not only text, but also **handwriting**, pictures, charts, or other graphic images, is converted into a bitmap. This bitmap is encrypted and printed, preferably in a widely-spaced format for ease of subsequent processing, as an encrypted document. The encrypted document may then be copied or sent via facsimile machine as any other printed document, but without disclosing its contents to individuals other than the intended recipient. The encrypted document, or a replica thereof, is then scanned into a decryption device, which converts it into an encrypted bitmap, decrypts the encrypted bitmap, and displays or prints the decrypted document. Bitmap compression may optionally be used to reduce the size of the encrypted document.

56 Claims, 10 Drawing Figures

=> d l6 3 kwic

US PAT NO: 5,444,840 [IMAGE AVAILABLE] L6: 3 of 16

DETDESC:

DETD(24)

It . . . a paragraph which is relatively isolated from the remainder

of the text. This part of the letter easily can be **recognized** from the **relative** proportion of text **space** to blank **space** without first converting the text into code. Once recognized, 39, this portion can be converted, identified as "date" and "addressee". . .

DETDESC:

DETD(60)

There . . . course, be those documents which cannot be handled automatically. Some will be in unrecognizable fonts or typefaces, some perhaps even **handwritten**, some will be (or will include) poor quality photocopies and some will be in a language other than one for. . .
=> d l6 3 fro

US PAT NO: 5,444,840 [IMAGE AVAILABLE] L6: 3 of 16
DATE ISSUED: Aug. 22, 1995
TITLE: Multiple image font processing
INVENTOR: Horst Froessl, Gutenbergstrasse 2-4, 6944 Hemsbach, Federal Republic of Germany
APPL-NO: 08/361,846
DATE FILED: Dec. 21, 1994
REL-US-DATA: Continuation of Ser. No. 779,629, Oct. 21, 1991, abandoned, which is a continuation-in-part of Ser. No. 536,769, Jun. 12, 1990, Pat. No. 5,109,439, and a continuation-in-part of Ser. No. 547,190, Jul. 3, 1990, Pat. No. 5,396,588.
INT-CL: [6] G06T 7/00; G06F 17/30
US-CL-ISSUED: 395/145; 364/419.19; 382/181, 291; 375/150
US-CL-CURRENT: 395/145; 364/419.19; 382/181, 291; 395/150
SEARCH-FLD: 395/145, 150, 151; 364/225.3, 225.4, 226.6, 419.19, 419.07, 926.8; 382/69, 36, 9, 10, 11, 48
REF-CITED:

U.S. PATENT DOCUMENTS

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4,358,824	11/1982	Glickman et al.	364/200
4,553,261	11/1985	Froessl	382/57
4,610,025	9/1986	Blum et al.	382/9
4,726,065	2/1988	Froessl	381/41
4,748,678	5/1988	Takeda et al.	382/56
4,817,166	3/1989	Gonzalez et al.	382/1
4,944,022	7/1990	Yasujima et al.	382/14
4,985,863	1/1991	Fujisawa et al.	364/900
4,999,790	3/1991	Murayama et al.	364/521
5,109,439	4/1992	Froessl	382/61

5,159,667 10/1992 Borrey et al. 395/148
ART-UNIT: 231
PRIM-EXMR: Heather R. Herndon
ASST-EXMR: J. Feild
LEGAL-REP: Walter C. Farley

ABSTRACT:
A sequence of documents is delivered to an optical scanner in which each document is scanned to form a digital image representation of the content of the document. In one embodiment, the image representation is converted into code (ASCII) and is automatically examined by data processing apparatus to select search words which meet predetermined criteria and by which the document can be subsequently located. In another embodiment, the image is not converted. The search words are stored in a non-volatile memory in code form and the entire document content is stored in mass storage, either in code or image form. Techniques for selecting the search words are disclosed, including establishing a font table and constructing images of entered search words from the table.
12 Claims, 11 Drawing Figures
=> d l6 2 kwic

US PAT NO: 5,477,012 [IMAGE AVAILABLE] L6: 2 of 16

ABSTRACT:
This invention relates to a coordinate sensor for **detecting** the position of a moveable **detector** **relative** to a data **space** coded with coordinate information by **detecting** and processing the coordinate information. It may be used for obtaining both two and three dimensional position related information, such as might be used for determining the position of a pen/pencil on paper for **handwriting** data input. It also may be used for detecting angular, rotational, and linear motion. The coordinate sensor provides an apparatus. . .

SUMMARY:

BSUM(27)

It . . . use with a computer that includes a movable element, whose exact position and/or movement within a plane or three dimensional **space** **relative** to a plane can be **determined** without any physical connection between the movable element and the plane.

SUMMARY:

BSUM(28)

It is an object of the present invention to provide an apparatus and

method for **handwriting** recognition.

SUMMARY:

BSUM(31)

It is an object of the present invention to provide an apparatus and method for **handwriting** verification.

```
=> d his
     (FILE 'USPAT' ENTERED AT 09:46:34 ON 13 MAY 96)
L1          1778 S RELATIVE(6A)(PLACEMENT OR DISTANCE# OR SPACE#)(6A)(RECOG
NIZ
L2           263 S RECOGNIZ?(6A)(HANDWRITTEN OR HANDWRITING OR SCRIPT#)
L3             1 S L1 AND L2
L4           289 S RECOGNIZ?(10A)(HANDWRITTEN OR HANDWRITING OR SCRIPT#)
L5             1 S L4 AND L1
L6            16 S (HANDWRITTEN OR HANDWRITING OR SCRIPT#) AND L1
```

```
TERMINAL (ENTER 1, 2, 3, 4, OR ?):3
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                                                                   *
  *           Welcome to MESSENGER (APS Text) at USPTO                *
  *                                                                   *
  *                                                                   *
  *    The USPTO production files are current through:                *
  *     05 MAR 1996 for U.S. Patent Text Data.                        *
  *     05 MAR 1996 for U.S. Current Classification data.             *
  *     05 MAR 1996 for U.S. Patent Image Data.                       *
  *                                                                   *
  *       * PLEASE USE 305-9000 FOR NEW TELEPHONE NUMBER *            *
  *                                                                   *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *  DISCLAIMER:                                                      *
  *  Neither the United States Government, nor any agency             *
  *  thereof, nor any of their contractors, subcontractors or         *
  *  employees make any warranty, expressed or implied,               *
  *  including any warranty of marketability of fitness for a         *
  *  particular purpose; nor assumes any legal liability or           *
  *  responsibility for any party's use, or the results of            *
  *  such, of the data.                                               *
  *                                                                   *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                Help Desk --> 703-305-9000                         *
  *                                                                   *
  *    The Help Desk is staffed for APS support 7 days/week.          *
  *      Monday through Friday:      6:30am - 9:00pm                  *
  *      Saturday, Sunday, Holidays: 8:30am - 5:00 pm                 *
  *                                                                   *
  *    The Help Desk staff at this number will handle all APS         *
  *    related questions.                                             *
  *                                                                   *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *                                                                   *
  *    >>>>>>>>>>>>> NEW SUNDAY HOURS !!! <<<<<<<<<<<<<               *
  *                                                                   *
  *    The APS is available:                                          *
  *            6:30am - 9:00pm Monday through Friday                  *
  *            7:30am - 5:00pm Saturday, Sunday, Holidays             *
  *                                                                   *
  *      APS is unavailable Thanksgiving Day, Christmas Day,          *
  *      and New Year's Day.                                          *
  *                                                                   *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
FILE 'USPAT' ENTERED AT 16:45:14 ON 11 MAR 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

```
  *              W E L C O M E   T O   T H E                  *
  *          U. S.   P A T E N T   T E X T   F I L E          *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> d acc 5258935

1.  5,258,935, Nov. 2, 1993, Self-inputting checkbook accounting device;
Michael J. Ure, 364/705.02, 705.03, 709.11 [IMAGE AVAILABLE]
=> d acc 4578811

1.  4,578,811, Mar. 25, 1986, Key-in device; Naoki Inagaki, 382/182, 187,
202 [IMAGE AVAILABLE]
=> d acc 5189633

1.  5,189,633, Feb. 23, 1993, Apparatus and method for interactively
manipulating mathematical equations; Allan R. Bonadio, 364/709.12, 735;
395/146, 161 [IMAGE AVAILABLE]
=> d acc 5105468

1.  5,105,468, Apr. 14, 1992, Time delay neural network for printed and
cursive handwritten character recognition; Isabelle Guyon, et al.,
382/158, 187; 395/22 [IMAGE AVAILABLE]
=> file j
FILE 'JPOABS' ENTERED AT 16:52:53 ON 11 MAR 96
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
  *     J A P A N E S E   P A T E N T   A B S T R A C T S      *
  *                                                            *
  * CURRENTLY, DATA IS LOADED THROUGH THE ABSTRACT PUBLICATION  *
  * DATE OF DECEMBER 26, 1994                                  *
  * THE LATEST GROUPS RECEIVED ARE: C1292 E1651, M1731 & P1851. *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> s mathematic?(6a)(expression# or equation#)
           475 MATHEMATIC?
         11317 EXPRESSION#
         14473 EQUATION#
L1         144 MATHEMATIC?(6A)(EXPRESSION# OR EQUATION#)
=> s (handwrit? or script?)(P)l1
          1828 HANDWRIT?
           193 SCRIPT?
L2           2 (HANDWRIT? OR SCRIPT?)(P)L1
=> d l2 1-02

1.  06-119313, Apr. 28, 1994, PEN INPUT SYSTEM DOCUMENT PREPARING DEVICE;
TSUTOMU KOBAYASHI, G06F 15/20

2.  01-130291, May 23, 1989, DATA RECOGNIZING DEVICE; KAZUHIRO
MATSUBAYASHI, G06K 9/03; G06K 9/62
=> d l2 1 ab
```

ABSTRACT:

PURPOSE:To provide a pen input type document preparing device capable of easily inputting a methematical expression with an argument in the same way as the normal input of a character.

CONSTITUTION:When a **mathematical** **expression** is **handwritten** on the character recognition frame of a display integrated type input part 1 by a stylus pen 10, the recognition result of the **mathematical** **expression** by a CPU 6 is displayed in the input window of the display integrated type input part 1 and the guide frame inputting the argument of the **mathematical** **expression** is displayed in the input window. When the argument is **handwritten** on the character recognition frame by the stylus pen 10, the recognition result by the CPU 6 is displayed within the guide frame and the **mathematical** **expression** data with the argument are generated. Subsequently, when the termination key of the display integrated type input part 1 stylus pen 10, is depressed by the stylus pen 10 the **mathematical** **expression** data is displayed on the cursor location in a document and the **mathematical** **expression** can be input in the same operation as the character input.

```
=> d his
     (FILE 'USPAT' ENTERED AT 16:45:14 ON 11 MAR 96)
     FILE 'JPOABS' ENTERED AT 16:52:53 ON 11 MAR 96
L1           144 S MATHEMATIC?(6A)(EXPRESSION# OR EQUATION#)
L2             2 S (HANDWRIT? OR SCRIPT?)(P)L1
=>
```

ERMINAL (ENTER 1, 2, 3, 4, OR ?):3

* *

*

* Welcome to MESSENGER (APS Text) at USPTO *

*

*

* The USPTO production files are current through: *

* 05 MAR 1996 for U.S. Patent Text Data. *

* 05 MAR 1996 for U.S. Current Classification data. *

* 05 MAR 1996 for U.S. Patent Image Data. *

*

* * PLEASE USE 305-9000 FOR NEW TELEPHONE NUMBER * *

*

* *

* DISCLAIMER: *

* Neither the United States Government, nor any agency *

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* including any warranty of marketability of fitness for a *

* particular purpose; nor assumes any legal liability or *

* responsibility for any party's use, or the results of *

* such, of the data. *

*

* *

* Help Desk --> 703-305-9000 *

*

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*

* The Help Desk staff at this number will handle all APS *

* related questions. *

*

* *

*

* >>>>>>>>>>>>> NEW SUNDAY HOURS !!! <<<<<<<<<<<<< *

*

* The APS is available: *

* 6:30am - 9:00pm Monday through Friday *

* 7:30am - 5:00pm Saturday, Sunday, Holidays *

*

* APS is unavailable Thanksgiving Day, Christmas Day, *

* and New Year's Day. *

*

* *

FILE 'USPAT' ENTERED AT 13:06:50 ON 11 MAR 96

* *

```
  *              W E L C O M E   T O   T H E                    *
  *          U. S.   P A T E N T   T E X T   F I L E            *
  * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
=> s touch sensitive
         46463 TOUCH
        196312 SENSITIVE
L1        1134 TOUCH SENSITIVE
                 (TOUCH(W)SENSITIVE)
=> s 5189633/pn
L2           1 5189633/PN
=> s l1 and l2
L3           0 L1 AND L2
=> s 4578811/pn
L4           1 4578811/PN
=> s l4 and l1
L5           0 L4 AND L1
=> s l1(4a)display?

        220414 DISPLAY?
L6         282 L1(4A)DISPLAY?
=> s handwrit?(p)l6
          1953 HANDWRIT?
L7           1 HANDWRIT?(P)L6
=> d l7

1.  5,480,246, Jan. 2, 1996, Tape printing apparatus; Yoshinari Morimoto,
400/615.2, 63, 76 [IMAGE AVAILABLE]
=> s l1(7a)display?

        220414 DISPLAY?
L8         342 L1(7A)DISPLAY?
=> s handwrit?(p)l8
          1953 HANDWRIT?
L9           2 HANDWRIT?(P)L8
=> d l9

1.  5,480,246, Jan. 2, 1996, Tape printing apparatus; Yoshinari Morimoto,
400/615.2, 63, 76 [IMAGE AVAILABLE]
=> d l9 2

2.  5,105,468, Apr. 14, 1992, Time delay neural network for printed and
cursive handwritten character recognition; Isabelle Guyon, et al.,
382/158, 187; 395/22 [IMAGE AVAILABLE]
=> d l9 2 fro


US PAT NO:     5,105,468 [IMAGE AVAILABLE]            L9: 2 of 2
```

DATE ISSUED: Apr. 14, 1992
TITLE: Time delay neural network for printed and cursive handwritten character recognition
INVENTOR: Isabelle Guyon, Locust, NJ
John S. Denker, Leonardo, NJ
Yann LeCun, Bonnelle, France
ASSIGNEE: AT&T Bell Laboratories, Murray Hill, NJ (U.S. corp.)
APPL-NO: 07/679,988
DATE FILED: Apr. 3, 1991
INT-CL: [5] G06K 9/62
US-CL-ISSUED: 382/14, 15
US-CL-CURRENT: 382/158, 187; 395/22
SEARCH-FLD: 382/10, 14-15, 37-39, 13
REF-CITED:

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4,653,107	3/1987	Shojima et al.	382/13
4,809,193	2/1989	Jourjine	382/15
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4,937,872	6/1990	Hopfield et al.	382/10
4,941,122	7/1990	Weideman	382/15
4,965,725	10/1990	Rutenberg	382/15
5,005,206	4/1991	Naillon et al.	382/15
5,040,230	8/1991	Takatori et al.	382/14
5,048,100	9/1991	Kuperstein	382/15

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Odaka, K. et al., "Online Recognition of Handwritten Characters . . . ", The Transactions of the IECE of Japan, vol. E63, No. 2, Feb. 1980, pp. 168-169.

Tappert, C. C. et al., "The State of the Art in On-Line Handwriting Recognition", IEEE Trans. on Pattern Analysis and Machine Intelligence, vol. 12, No. 8, Aug. 1990, pp. 787-808.

Guyon, I et al., "A Time Delay Neural Network . . . ", International Neural Network Conference, vol. I, Paris, France, Jul. 9-13, 1990, pp. 42-45.

Waibel, A. et al., "Phoneme Recognition Using Time-Delay Neural Networks", IEEE Trans. on Acoustics, Speech and Signal Processing, vol. 37, No. 3, Mar. 1989, pp. 328-339.

ART-UNIT: 266
PRIM-EXMR: Stephen Brinich
LEGAL-REP: Gregory C. Ranieri

ABSTRACT:
A time delay neural network is defined having feature detection layers which are constrained for extracting features and subsampling a sequence of feature vectors input to the particular feature detection layer.

Output from the network for both digit and uppercase letters is provided by an output classification layer which is fully connected to the final feature detection layer. Each feature vector relates to coordinate information about the original character preserved in a temporal order together with additional information related to the original character at the particular coordinate point. Such additional information may include local geometric information, local pen information, and phantom stroke coordinate information relating to connecting segments between the end point of one stroke and the beginning point of another stroke.
The network is also defined to increase the number of feature elements in each feature vector from one feature detection layer to the next. That is, as the network is reducing its dependence on temporally related features, it is increasing its dependence on more features and more complex features.

7 Claims, 9 Drawing Figures

=> d l9 2 kwic

US PAT NO: 5,105,468 [IMAGE AVAILABLE] L9: 2 of 2

DETDESC:

DETD(2)

An exemplary network for on-line recognition of **handwritten** characters including digits and uppercase letters is described below. Characters are entered on a touch terminal consisting of a transparent **touch**-**sensitive** screen overlayed on a liquid-crystal **display**. Drawing actions are recorded as a sequence of coordinates [x(t), y(t)]. This allows the use of a representation for the. . .

=> d his

(FILE 'USPAT' ENTERED AT 13:06:50 ON 11 MAR 96)

```
L1          1134 S TOUCH SENSITIVE
L2             1 S 5189633/PN
L3             0 S L1 AND L2
L4             1 S 4578811/PN
L5             0 S L4 AND L1
L6           282 S L1(4A)DISPLAY?
L7             1 S HANDWRIT?(P)L6
L8           342 S L1(7A)DISPLAY?
L9             2 S HANDWRIT?(P)L8
=
```